

WHAT IS CLAIMED IS:

1. An image forming apparatus comprising:
a plurality of developing devices, each of
which includes a developer carrying member for
5 carrying a developer to develop an electrostatic image
formed on an image bearing member with a developer,
and a developer regulating member for regulating the
developer carried on said developer carrying member;
common voltage applying means for applying
10 voltages to said developer regulating members,
wherein the voltages applied to said
developer carrying members are variable independently
from each other, and when at least one of said
voltages varies, the voltage applied by said voltage
15 applying means is capable of being changed.

2. An apparatus according to Claim 1, wherein at
least when a plurality of developing devices are in
operation, the voltages are applied to the developer
20 carrying members associated with said developing
devices in operation, and said developer regulating
members of said developing devices in operation are
supplied with the voltages by said voltage applying
means.

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3. An apparatus according to Claim 1, wherein
the voltages applied by said voltage applying means

are determined by respective voltages applied to said developer carrying members.

4. An apparatus according to Claim 1, wherein
5 the voltages applied by said voltage applying means are determined on the basis of a maximum value and/or minimum value of the voltages applied to said developer carrying members.

10 5. An apparatus according to Claim 1, wherein the voltages applied by said voltage applying means are determined on the basis of an average of the voltages applied to said developer carrying members.

15 6. An apparatus according to Claim 1, wherein the voltages applied by said voltage applying means are determined such that potential difference between the voltage applied by said voltage applying means and a maximum value or a minimum value of the voltages
20 applied to said developer carrying members, is within a predetermined range.

7. An apparatus according to Claim 1, wherein
25 the voltage applied by said voltage applying means is determined such that potential differences between the voltages applied by said voltage applying means and the voltages applied to said developer carrying

members.

8. An apparatus according to Claim 1, wherein an assumed value of the voltage applied by said voltage applying means is determined on the basis of an average of the voltages applied to said developer carrying members, when a maximum potential difference between the assumed value and the voltages applied to said developer carrying members, is within a predetermined range, the assumed value is determined as being the voltage applied by said voltage applying means, and when the maximum potential difference is not within the predetermined range, the voltage applied by said voltage applying means is determined such that maximum potential difference is within the predetermined range, by changing the assumed value.

9. An apparatus according to Claim 8, wherein a determination is made as to such a voltage applied to said developer carrying members as to provide a minimum potential difference between the voltage applied by said voltage applying means and the voltages applied to said developer carrying members, and when the potential difference between the thus determined voltage and the assumed value is not within a predetermined range, the assumed value is changed so that said potential difference is within the

predetermined range.

10. An apparatus according to any one of Claims 6-9, further comprising an ambience detecting means for detection an ambient condition, wherein said predetermined range is determined in accordance with an output of ambience detecting means.

11. An apparatus according to Claim 1, wherein a range of the voltages applied to said developer carrying members is limited within a predetermined range.

12. An apparatus according to Claim 11, wherein the voltages applications to developer carrying members are determined such that potential differences between the voltages applied by said voltage applying means and the voltage applied by said developer carrying members are within a predetermined range.

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13. An apparatus according to Claim 1 or 10. An apparatus according to any one of Claims 6-9, further comprising an ambience detecting means for detection an ambient condition, wherein the voltage applied by said voltage applying means is determined in accordance with an output of ambience detecting means.

14. An apparatus according to Claim 1, wherein
each of the voltages applied to said developer
carrying members are changeable in accordance with a
result of detection of densities of a reference images
5 formed by the respective said developer carrying
members.

15. An apparatus according to Claim 14, wherein
the voltages applied by said voltage applying means
10 are determined in accordance with a result of
detection of densities of the reference images.

16. An apparatus according to Claim 14, wherein
the density of the reference image is detected by
15 formation of the image on said image bearing member or
an image transferred onto a transfer member from said
image bearing member.

17. An apparatus according to Claim 1, wherein
20 the voltages which are applied to developer carrying
members and which are variable are DC voltages.

18. An apparatus according to Claim 1, further
comprising a plurality of image bearing members, which
25 are developed by said developer carrying members,
respectively.

19. An apparatus according to Claim 1, wherein
one of said developing devices is provided, together
with said image bearing member, in a process cartridge
which is detachably mountable to a main assembly of an
5 image forming apparatus.

20. An image forming apparatus comprising:
a plurality of developing devices, each of
which includes a developer carrying member for
10 carrying a developer to develop an electrostatic image
formed on an image bearing member with a developer,
and a developer regulating member for regulating the
developer carried on said developer carrying member;
common voltage applying means for applying
15 voltages to said developer regulating members,
wherein each of the voltages applied to said
developer carrying members are changeable, and the
voltages applied by said voltage applying means are
determined on the basis of the respective voltages
20 applied to said developer carrying members.

21. An apparatus according to Claim 20, wherein
at least when a plurality of developing devices are in
operation, the voltages are applied to the developer
25 carrying members associated with said developing
devices in operation, and said developer regulating
members of said developing devices in operation are

supplied with the voltages by said voltage applying means.

22. An apparatus according to Claim 20, wherein
5 the voltages applied by said voltage applying means
are determined on the basis of a maximum value and/or
minimum value of the voltages applied to said
developer carrying members.

10 23. An apparatus according to Claim 20, wherein
the voltages applied by said voltage applying means
are determined on the basis of an average of the
voltages applied to said developer carrying members.

15 24. An apparatus according to Claim 20, wherein
the voltages applied by said voltage applying means
are determined such that potential difference between
the voltage applied by said voltage applying means and
a maximum value or a minimum value of the voltages
20 applied to said developer carrying members, is within
a predetermined range.

25. An apparatus according to Claim 20, wherein
the voltage applied by said voltage applying means is
determined such that potential differences between the
voltages applied by said voltage applying means and
the voltages applied to said developer carrying

members.

26. An apparatus according to Claim 20, wherein an assumed value of the voltage applied by said 5 voltage applying means is determined on the basis of an average of the voltages applied to said developer carrying members, when a maximum potential difference between the assumed value and the voltages applied to said developer carrying members, is within a 10 predetermined range, the assumed value is determined as being the voltage applied by said voltage applying means, and when the maximum potential difference is not within the predetermined range, the voltage applied by said voltage applying means is determined 15 such that maximum potential difference is within the predetermined range, by changing the assumed value.

27. An apparatus according to Claim 26, wherein a determination is made as to such a voltage applied to 20 said developer carrying members as to provide a minimum potential difference between the voltage applied by said voltage applying means and the voltages applied to said developer carrying members, and when the potential difference between the thus 25 determined voltage and the assumed value is not within a predetermined range, the assumed value is changed so that said potential difference is within the

predetermined range.

28. An apparatus according to any one of Claims 24-27, further comprising an ambience detecting means 5 for detection an ambient condition, wherein said predetermined range is determined in accordance with an output of ambience detecting means.

29. An apparatus according to Claim 20, further 10 comprising an ambience detecting means for detection an ambient condition, wherein the voltage applied by said voltage applying means is determined in accordance with an output of ambience detecting means.

15 30. An apparatus according to Claim 20, wherein each of the voltages applied to said developer carrying members are changeable in accordance with a result of detection of densities of a reference images formed by the respective said developer carrying 20 members.

31. An apparatus according to Claim 30, wherein the density of the reference image is detected by formation of the image on said image bearing member or 25 an image transferred onto a transfer member from said image bearing member.

32. An apparatus according to Claim 20, wherein the voltages which are applied to developer carrying members and which are variable are DC voltages.

5 33. An apparatus according to Claim 20, further comprising a plurality of image bearing members, which are developed by said developer carrying members, respectively.

10 34. An apparatus according to Claim 20, wherein one of said developing devices is provided, together with said image bearing member, in a process cartridge which is detachably mountable to a main assembly of an image forming apparatus.

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35. An image forming apparatus comprising:
a plurality of developing devices, each of which includes a developer carrying member for carrying a developer to develop an electrostatic image 20 formed on an image bearing member with a developer, and a developer regulating member for regulating the developer carried on said developer carrying member; common voltage applying means for applying voltages to said developer regulating members, 25 wherein each of the voltages applied to said developer carrying members are changeable in accordance with a result of detection of densities of

a reference images formed by the respective said developer carrying members, and the voltages applied by said voltage applying means are determined in accordance with a result of detection of densities of 5 respective reference images.

36. An apparatus according to Claim 35, wherein at least when a plurality of developing devices are in operation, the voltages are applied to the developer 10 carrying members associated with said developing devices in operation, and said developer regulating members of said developing devices in operation are supplied with the voltages by said voltage applying means.

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37. An apparatus according to Claim 35, wherein the voltages applied by said voltage applying means are determined such that potential difference between the voltage applied by said voltage applying means and 20 a maximum value or a minimum value of the voltages applied to said developer carrying members, is within a predetermined range.

38. An apparatus according to Claim 35, wherein 25 the voltage applied by said voltage applying means is determined such that potential differences between the voltages applied by said voltage applying means and

the voltages applied to said developer carrying members.

39. An apparatus according to Claim 37 or 38,
5 further comprising an ambience detecting means for detection an ambient condition, wherein said predetermined range is determined in accordance with an output of ambience detecting means.

10 40. An apparatus according to Claim 35, further comprising an ambience detecting means for detection an ambient condition, wherein the voltage applied by said voltage applying means is determined in accordance with an output of ambience detecting means.

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41. An apparatus according to Claim 35, wherein the density of the reference image is detected by formation of the image on said image bearing member or an image transferred onto a transfer member from said 20 image bearing member.

42. An apparatus according to Claim 35, wherein the voltages which are applied to developer carrying members and which are variable are DC voltages.

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43. An apparatus according to Claim 35, further comprising a plurality of image bearing members, which

are developed by said developer carrying members, respectively.

44. An apparatus according to Claim 35, wherein
5 one of said developing devices is provided, together
with said image bearing member, in a process cartridge
which is detachably mountable to a main assembly of an
image forming apparatus.

10 45. An image forming apparatus comprising:
a plurality of developing devices, each of
which includes a developer carrying member for
carrying a developer to develop an electrostatic image
formed on an image bearing member with a developer,
15 and a developer regulating member for regulating the
developer carried on said developer carrying member;
a common voltage applying means for applying
a voltage to said developer regulating member!; .

20 46. An apparatus according to Claim 45, further
comprising a plurality of voltage applying means for
applying voltages to said developer carrying members,
and the voltages applied to said respective said
developer carrying member are independently
25 changeable.